

CLEAN VERSION OF SUBSTITUTE ABSTRACT

ABSTRACT

The present invention provides an optical demultiplexer and an optical multi-/demultiplexer at low cost without reducing performance capabilities. The optical demultiplexer includes a multi-mode waveguide having such an optical path length as to cause a difference between first and second wavelengths with respect to a phase difference between zero- and first-order modes to become an integral multiple of π , an input waveguide optically connected to the input side of the multi-mode waveguide such that the optical axis thereof is offset from the center line of the multi-mode waveguide, and two output waveguides optically coupled to the multi-mode waveguide at different positions of the output side of the multi-mode waveguide. The two output waveguides are located in such a manner as to maximize the extinction ratio.